

Amendment to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended). A method of partitioning a network element into a plurality of virtual network elements, comprising:

providing a virtual network element manager that manages resources of the network element, wherein managing resources comprises: the resources including processor time, memory, bandwidth, and ports;

managing processor time utilizing time slicing at the virtual network element manager;

managing memory, wherein the virtual network element manager receives memory allocation requests from said plurality of virtual network elements; and

managing ports, wherein the virtual network element manager receives queries from said plurality of virtual network elements for ports available for the virtual network element sending the query;

allocating a portion of the resources of the network element to one of the plurality of virtual network elements;

permitting the one of the plurality of virtual network elements to utilize only the portion of the resources of the network element that has been allocated to the one of the plurality of virtual network elements; and

reallocating a portion of the resources of the network element allocated to one of the virtual network elements to another one of the virtual network elements.

Claims 2-3 (canceled).

Claim 4 (original). The method of claim 1, wherein the network element transmits data in a network.

Claim 5 (original). The method of claim 4, wherein the network element is a switch.

Claim 6 (currently amended). A network element partitioned into a plurality of virtual network elements, the network element comprising:

resources comprising processor time of a single processor, memory, bandwidth, and a plurality of ports; and

a virtual network element manager that manages the resources of the network element, the virtual network element manager configured to allocate and reallocate the resources between said plurality of virtual network elements, utilize time slicing for managing processor time, receive memory allocation requests for managing memory, and receive queries from the virtual network elements for managing ports;

wherein each of said plurality of virtual network elements is permitted to utilize only the portion of the resources of the network element that has been allocated or reallocated to the virtual network element.

Claims 7-8 (canceled).

Claim 9 (original). The network element of claim 6, wherein the network element transmits data in a network.

Claim 10 (original). The network element of claim 9, wherein the network element is a switch.

Claim 11 (currently amended). A network element, comprising:
resources comprising processor time, memory, bandwidth, and ports;
a means for managing resources of the network element, said managing means configured to allocate and reallocate said resources between said plurality of virtual network elements and comprising:
means for utilizing time slicing for managing processor time;
means for receiving memory allocation requests from said plurality of virtual network elements for managing memory; and
means for receiving queries from said plurality of network elements for managing ports; and
a means for utilizing a portion of the resource of the network element, wherein the means for utilizing is permitted to utilize only the portion of the resource of the network element.

Claims 12-13 (canceled).

Claim 14 (original). The network element of claim 11, wherein the network element transmits data in a network.

Claim 15 (original). The network element of claim 14, wherein the network element is a switch.

Claims 16-21 (canceled).

Claim 22 (currently amended). A method of partitioning a network element that transmits data in a network into a plurality of virtual network elements, comprising:

providing an indication of percentage of memory and processor time that is allocated or available to said plurality of virtual network elements;

receiving input as to a portion of at least one resource of the network element to allocate to one of the plurality of virtual network elements, wherein the at least one resource of the network element is processor time, memory, ~~bandwidth~~, or ports;

allocating the portion of the network element to the one of the plurality of virtual network elements;

receiving input specifying an application binary for the virtual network element;

executing the application binary for the virtual network element;

permitting the one of the plurality of virtual network elements to utilize only the portion of the at least one resource of the network element that has been allocated to the one of the plurality of virtual network elements; and

reallocating a portion of the resources of the network element allocated to one of the virtual network elements to another one of the virtual network elements.

Claims 23-25 (canceled).

Claim 26 (original). The method of claim 22, wherein receiving input as to a portion of at least one resource includes:

receiving input as to a portion of processor time of the network element to allocate to one of the plurality of virtual network elements;

receiving input as to a portion of memory of the network element to allocate to one of the plurality of virtual network elements; and

receiving input as to a portion of ports of the network element to allocate to one of the plurality of virtual network elements.

Claim 27 (original). The method of claim 26, wherein the network element transmits data in a network.

Claim 28 (original). The method of claim 27, wherein the network element is a switch.

Claim 29 (canceled).

Claim 30 (currently amended): The method of claim 1 wherein allocating a portion of the resources ~~comprising~~ comprises receiving user input defining the portion of resources to allocate to each of said plurality of virtual network elements.

Claim 31 (canceled).

Claim 32 (new): The method of claim 30 further comprising providing an indication of percentage of memory and processor time that is allocated to said plurality of virtual network elements.

Claim 33 (new): The method of claim 1 wherein at least two of said plurality of virtual network elements correspond to different levels of service.

Claim 34 (new): The method of claim 1 further comprising indicating if the virtual network element has insufficient memory to fulfill an allocation request or if the virtual network element requesting said memory has insufficient memory allocated thereto.

Claim 35 (new): The method of claim 1 wherein the network element comprises a single processor.